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Product datasheet

Anti-Cleaved PARP1 antibody [4B5BD2] ab110315

KO VALIDATED

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Overview

Product name	Anti-Cleaved PARP1 antibody [4B5BD2]
Description	Mouse monoclonal [4B5BD2] to Cleaved PARP1
Host species	Mouse
Specificity	ab110315 reacts with the N-terminal end formed by the cleavage adjacent to Asp214; it thus recognizes the apoptosis-specific 89 kDa catalytic domain fragment, but it does not recognize the full-length PARP1 or the 24 kDa DNA binding domain fragment.
Tested applications	**Suitable for:** WB, ICC/IF, In-Cell ELISA, Flow Cyt
Species reactivity	**Reacts with:** Human
Immunogen	Synthetic peptide. This information is considered to be commercially sensitive.
Positive control	Staurosporine-treated HeLa and HL60 cells
General notes	This monoclonal antibody to cleaved PARP1 has been knockout validated in Western blot. The expected band for cleaved PARP1 was observed in wild type cells and the band was not seen in knockout cells. This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact **orders@abcam.com**. The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As Product was previously marketed under the MitoSciences sub-brand.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.

Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituent: HEPES buffered saline
Purity	Ammonium Sulphate Precipitation
Purification notes	The antibody was produced in vitro using hybridomas grown in serum-free medium, and then purified by ammonium sulfate precipiation.
Clonality	Monoclonal
Clone number	4B5BD2
Isotype	IgG1
Light chain type	kappa

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab110315 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

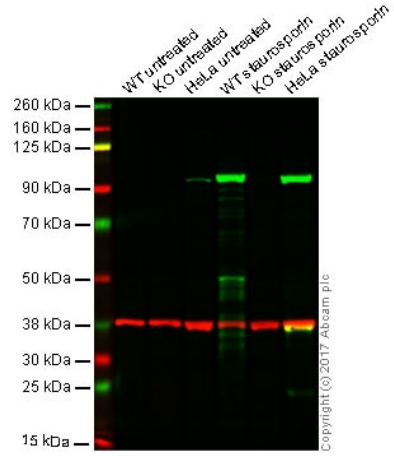
Application	Abreviews	Notes
WB	★★★★☆ (2)	Use a concentration of 0.25 - 1 µg/ml. Predicted molecular weight: 113 kDa.
ICC/IF	★☆☆☆☆ (2)	Use a concentration of 1 µg/ml.
In-Cell ELISA		Use a concentration of 1 µg/ml.
Flow Cyt		Use a concentration of 1 µg/ml. **ab170190** - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Target

Function	Involved in the base excision repair (BER) pathway, by catalyzing the poly(ADP-ribosyl)ation of a limited number of acceptor proteins involved in chromatin architecture and in DNA metabolism. This modification follows DNA damages and appears as an obligatory step in a detection/signaling pathway leading to the reparation of DNA strand breaks. Mediates the poly(ADP-ribosyl)ation of APLF and CHFR. Positively regulates the transcription of MTUS1 and negatively regulates the transcription of MTUS2/TIP150. With EEF1A1 and TXK, forms a complex that acts as a T-helper 1 (Th1) cell-specific transcription factor and binds the promoter of IFN-gamma to directly regulate its transcription, and is thus involved importantly in Th1 cytokine production. Required for PARP9 and DTX3L recruitment to DNA damage sites. PARP1-dependent PARP9-DTX3L-mediated ubiquitination promotes the rapid and specific recruitment of 53BP1/TP53BP1, UIMC1/RAP80, and BRCA1 to DNA damage sites.
Sequence similarities	Contains 1 BRCT domain. Contains 1 PARP alpha-helical domain. Contains 1 PARP catalytic domain. Contains 2 PARP-type zinc fingers.
Post-translational	Phosphorylated by PRKDC and TXK.

modifications	Poly-ADP-ribosylated by PARP2. Poly-ADP-ribosylation mediates the recruitment of CHD1L to DNA damage sites. S-nitrosylated, leading to inhibit transcription regulation activity.
Cellular localization	Nucleus. Nucleus, nucleolus. Localizes at sites of DNA damage.

Images

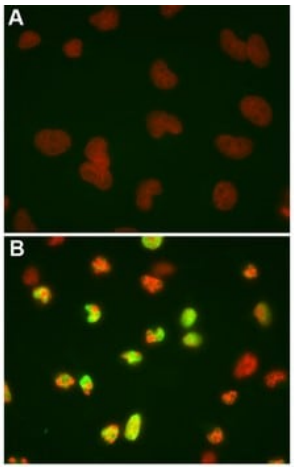


Western blot - Anti-Cleaved PARP1 antibody [4B5BD2] (ab110315)

Lane 1: Wild type HAP1 (untreated) whole cell lysate (20 µg)
Lane 2: PARP1 (untreated) knockout HAP1 (untreated) whole cell lysate (20 µg)
Lane 3: HeLa (untreated) whole cell lysate (20 µg)
Lane 4: HAP1 (staurosporine treated, 1 uM, 4 hr) whole cell lysate (20 µg)
Lane 5: PARP1 (staurosporine treated, 1 uM, 4 hr) knockout HAP1 whole cell lysate (20 µg)
Lane 6: HeLa (staurosporine treated, 1 uM, 4 hr) whole cell lysate (20 µg)

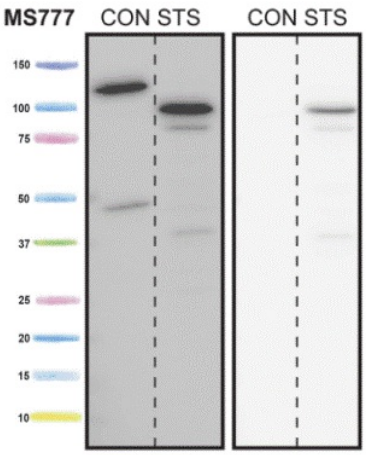
Lanes 1 - 6: Merged signal (red and green). Green - ab110315 observed at 100 kDa. Red - loading control, **ab181602**, observed at 37 kDa

ab110315 detected the expected band for cleaved PARP1 in wild type HAP1 cells treated with staurosporine and the band was not seen in PARP1 knockout cells treated with staurosporine. Wild-type and PARP1 knockout samples were subjected to SDS-PAGE. ab110315 and **ab181602** (Rabbit anti GAPDH loading control) were incubated overnight at 4°C at 1 ug/ml and 1/10000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed **ab216772** and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed **ab216777** secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-Cleaved PARP1 antibody [4B5BD2] (ab110315)

Immunocytochemistry images of stained untreated (A) and 4 hours 1 µM Staurosporine-treated (B) Human HeLa cells. The cells were paraformaldehyde fixed (4%, 20 minutes) and Triton X-100 permeabilized (0.1%, 15 minutes). The cells were incubated with 1.0 µg/ml ab110315 for 2 hours at room temperature or over night at 4°C. 10% goat serum was used as the blocking agent for all blocking steps. The secondary antibody was Alexa Fluor® 488 goat anti-mouse IgG (H+L) (in green) used at 2.0 µg/ml for 2 hours. DAPI was used to stain the cell nuclei (in red). Heat induced antigen retrieval (0.1 M Tris-HCl, 5% urea, pH 9.5 for 5 min at 95°C) improves signal. Note that the ab110315 labels only condensed and/or fragmented nuclei of apoptotic Staurosporine-treated cells.



Western blot - Anti-Cleaved PARP1 antibody [4B5BD2] (ab110315)

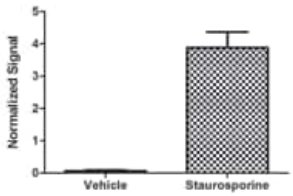
Lanes 1-2 : Antibody that recognizes full-length PARP1
Lanes 3-4 : Anti-Cleaved PARP1 antibody [4B5BD2] (ab110315) at 1 µg/ml

Lanes 1 & 3 : untreated HeLa cells
Lanes 2 & 4 : HeLa cells treated with 1 µM Staurosporinefor 4 hours

Lysates/proteins at 20 µg per lane.

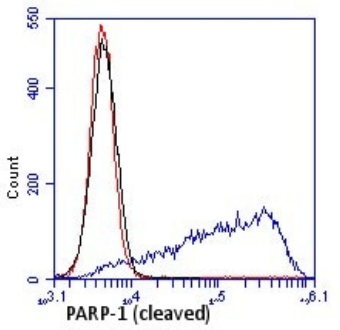
Predicted band size: 113 kDa

Western Blot analysis using ab110315 antibody and 20 µg of untreated (CON) or 4 hours 1 µM Staurosporine-treated (STS) HeLa cells. Blots were incubated with an antibody that recognizes both the full-length PARP1 and its 89 kDa fragment (left panel), or 1.0 µg/mL PARP1 (cleaved) antibody (ab110315) (right panel). Appropriate HRP-conjugated secondary antibodies followed by ECL detection were used. Note that the MS777 antibody recognizes the apoptosis-specific 89 kDa fragment of PARP1 but it does not recognize the full-length PARP1.



In-Cell ELISA - Anti-Cleaved PARP1 antibody [4B5BD2] (ab110315)

In-Cell ELISA (ICE) using ab110315 on HeLa cells treated with Staurosporine to induce apoptosis. HeLa cells were seeded overnight (50,000 cells/well), treated for 4 hours with 1 µM Staurosporine or with the drug vehicle (DMSO), fixed for Detaching Adherent Cells and analyzed.



Flow Cytometry - Anti-Cleaved PARP1 antibody [4B5BD2] (ab110315)

Flow cytometry analysis of apoptosis using ab110315. HL-60 cells were treated with 1 µM Staurosporin for 4 hours (blue) or vehicle control (red). Control cells were also stained with an equal amount of an isotype control antibody (black).

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